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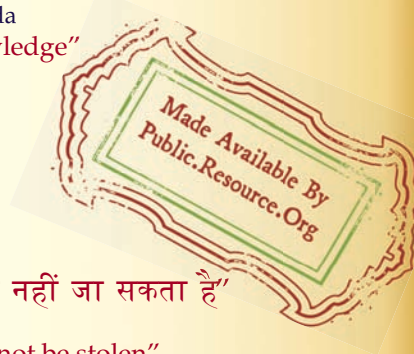
IS 14349 (1996): Code for Hygienic COnditions for Edible Oil and Vanaspati Manufacturing Units. ICS 67.200.10



“ज्ञान से एक नये भारत का निर्माण”

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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

IS 14349 : 1996

भारतीय मानक

खाद्य तेल एवं वनस्पति इकाइयों के लिए स्वास्थ्यकर संहिता

Indian Standard

CODE FOR HYGIENIC CONDITIONS FOR EDIBLE OIL
AND *VANASPATI* MANUFACTURING UNITS

ICS 67.200.10

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Food Hygiene Sectional Committee had been approved by the Food and Agriculture Division Council.

Consumers do not have the available knowledge or means of determining the hygienic quality of the food they purchase. For this, they rely on the hygienic standards of various industries that prepare and handle food materials. Unless the factory producing the food is governed by a strict hygienic code in respect of plant layout, and personnel, the quality of food produced cannot be considered as safe. These factors have been taken into consideration in the preparation of this code.

This code is an adjunct to IS 2491:1972 'Code for hygienic conditions for food processing units (*first revision*)' and it covers requirements specific to the edible oil and vanaspati manufacturing units.

This code is subject to the provisions in the *Factories Act*, 1948 and the *Prevention of Food Adulteration Act*, 1954, and the Rules framed thereunder.

The basic principles of hygiene underlining the technical advice in this code should be applied with appropriate modifications to all

Indian Standard

CODE FOR HYGIENIC CONDITIONS FOR EDIBLE OIL AND VANASPATHI MANUFACTURING UNITS

1 SCOPE

This code prescribes the hygienic conditions required for establishing and maintaining edible oil and vanaspathi units.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	Title
1172 : 1993	Code of basic requirements for water supply drainage and sanitation (<i>fourth revision</i>)
2491 : 1972	Code for hygienic conditions for food processing units (<i>first revision</i>)
3103 : 1975	Code of practice for industrial ventilation (<i>first revision</i>)
3646	Code of practice for interior illumination:
(Part 1) : 1992	General requirements and recommendations for working interiors (<i>first revision</i>)
(Part 2) : 1966	Schedule of illumination and glare index
(Part 3) : 1968	Calculation of coefficient of utilization by the B2 method
4251 : 1967	Quality tolerances for water for processed food industry

3 SITE

Edible oil and vanaspathi manufacturing units shall preferably be situated in a clean and healthy surroundings away from vehicular traffic, dust and open sewage drains etc. It shall be free from sources of obnoxious fumes, smoke, odours or excessive dust.

4 BUILDING

4.1 The structure shall be of permanent nature and

shall be suitable in size, construction and design to facilitate maintenance and hygienic operations for processing purposes. It should provide sufficient space for housing of equipment and storage of materials (raw as well as finished products) as is necessary for hygienic operations. The material of construction shall be of brick, plaster, cement, concrete, tile or any other equivalent materials which ensure cleanliness.

4.1.1 Construction of the building shall be such that it shall be rodentproof, flyproof and birdproof.

4.2 No portion of building shall be used for domestic purposes or manufacture of non-edible oil or processing of by products such as spent bleaching earth, soaps, fatty acids unless separated by suitable partitions or locations or other effective means so as to avoid contamination of the product with micro-organisms, odour, chemicals, filth or other foreign material.

4.3 Ventilation and Lighting

The premises shall be adequately lighted and ventilated. Ventilation and lighting shall also be in accordance with the *Factories Act, 1948* [see IS 3103 : 1975 and IS 3646 (Parts 1, 2 and 3)]. Exhaust fan shall be provided where necessary. Attention shall be given to provide proper ventilation to the equipment producing excessive heat, steam, vapours and gases.

4.4 Floor

The floor shall not be slippery. It shall be washable, properly sloped to gullies connected to sewers or drains. It shall be impervious to water and not affected by weak acids, alkalis or steam. Cemented floor shall be made for work room, store room and godown.

4.5 Walls and Ceilings

4.5.1 Internal walls and ceilings shall have smooth, non-absorbent light-coloured surface, free from crevices and sharp angles, to facilitate their efficient cleaning. The junction of the floor with the walls and the junction between the two walls should be rounded to prevent accumulation of dust.

4.5.2 The walls of the premises shall be oil painted upto a height of two metres above the floor (except in the case of finishes with glazed tiles) and the rest of the wall and ceiling being painted with suitable non-peeling material.

4.6 Repairs

The building shall be maintained in a proper state of

repair and cleanliness at all times. Whenever required, it may be lime washed, painted, disinfected, disinfested and deodorized.

4.7 Drainage

Effective drainage should be provided to drain off a large quantity of water used for washing the raw material, machinery, equipment, furniture, floor, etc; 15 to 30 cm half circular drains with glazed pipe at the bottom shall be provided. The slope of the floor shall be towards the drain and all the area are accessible to easy and effective cleaning. The drain openings shall be provided with screen traps to prevent solid matter from clogging the drains. The ends of the drains leading to the outside of the factory shall be made rodent proof by providing screens. The screens shall be examined periodically and replaced, if necessary. The drains should have water seals of minimum 5 cm diameter. At least 50 percent of the length of the drain should be covered to facilitate the movement of trolleys. Mesh type cover for the drain should be better to prevent habitation of cockroaches and rodents in closed areas of the drain.

5 RAW MATERIAL HANDLING

5.1 The raw material to be accepted for processing shall not contain decomposed toxic or extraneous substances which cannot be removed to acceptable levels during processing.

5.2 The raw material storage tanks shall be protected for extraneous contamination and sediment shall be cleaned preferably once in a year or whenever type of oil is changed.

6 FACTORY AND PROCESSING HYGIENE

6.1 For general cleanliness in a vanaspati or edible oil unit all the floors shall be washed at least once in a day.

6.2 Waste and rubbish shall be collected in covered receptacles and shall not be allowed to scatter on the floor of the unit. It should be disposed off in a manner which is not detrimental to the hygiene of the surroundings after its disposal.

6.3 Adequate measures shall be taken to prevent mould growth on equipment and internal structures of processing and storage rooms. Adequate steps shall be taken to prevent infestation by cockroaches and other household pests.

6.4 When pesticides are used, due care shall be exercised to prevent contamination of equipment, raw materials and packing materials. Under no circumstances shall these be used during processing.

6.5 The process room shall not be used or converted to a store room for raw materials or cleaning powders or detergents. Only the item required for processing on a particular day shall be kept in the processing room.

6.6 The premises where raw materials are stored shall be separate from the premises and shall be free from dampness where final packaging is concluded. The places used for storage, manufacture of handling of edible oil and vanaspati should be separate from those used for inedible raw materials and by products.

6.7 Accumulation of cotton waste, oil soaked gunny bags, spent bleaching earth and spent catalyst shall be isolated away from the processing and finished product filling and storage rooms.

6.8 Fire hazard of seeds and cake storage, filter mud and spent catalyst should be recognised and necessary precautions shall be taken for preventing fire accidents in the unit.

6.9 The factory effluents shall be disposed off from the factory in a manner which is not detrimental to the hygiene of the factory and its surroundings. It is essential to suitably treat the polluted effluents before final disposal.

6.10 Floors and drains shall be kept clean. The drains shall be made *pucca* with proper slope and be swept and washed periodically in order to keep them free from any deposits. The deposits provide suitable substrate for fast growth of the micro-organisms.

6.11 There shall be an adequate supply of safe and potable water. The storage tank for water shall, unless completely sealed, be kept covered with tight fitting lids, examined and cleaned regularly.

6.12 Proper places shall be provided for storage of brooms, brushes, buckets and other cleaning gear.

6.13 Window glass and light fittings shall be maintained clean and dust-free at all times.

6.14 There shall be no cobwebs in any part of the unit. Birds and domestic animals shall not be allowed in any part of the unit.

6.15 No lavatory, sink, cesspool or garbage shall be so situated or maintained that odours or fumes therefrom pervade any room where the product or raw materials are prepared or stored.

7 FILLING AND PACKING SECTION HYGIENE

7.1 The doors and windows shall be such that they would not allow entry of flies or any other type of crawling insects and birds. In other words either there shall be system of double doors or doors with a efficient door-closers. The windows and ventilators may be provided with wire-netting.

7.2 Flooring of the packing section shall be kept clean.

7.3 Eating, spitting, nose clean-ups, use of tobacco by the employees shall be prohibited and a notice to this effect shall be displayed.

8 PLANT AND EQUIPMENT HYGIENE

8.1 Materials for Equipment

8.1.1 All surfaces coming in contact with the oil/finished product shall be smooth, free from pits, crevices and loose scales and shall be non-absorbent. Besides surfaces shall be non-toxic and unaffected by the edible oils and the cleaning chemicals.

8.1.2 Galvanized sheets shall not be used at places where it comes in contact with the edible oil/vanaspati.

8.1.3 Cadmium and lead shall not be used where they may come in contact with any edible oil/vanaspati.

8.1.4 All gasketing and packing materials shall be non-porous, non-absorbent and fitted in a manner such that stagnation of material between the gasketed joints is avoided and proper cleaning is possible.

8.2 Installation of Equipment

8.2.1 All equipment shall be installed in a foundation of durable, easily cleanable material.

8.2.2 Whenever equipment passes through walls or floors, it shall be sealed there to or sufficient clearance shall be allowed to permit inspection, cleaning and maintenance.

8.2.3 All electrical connections, such as switch boxes, control boxes, conduit cables shall be installed in such a way as to facilitate proper cleaning, or be completely sealed to the equipment or wall.

8.2.4 The entire processing system shall be cleaned periodically to use.

8.2.5 Contaminating stores and spare parts of machinery shall be kept separate from the processing area.

9 WATER SUPPLY

9.1 There shall be an adequate supply of water (see IS 4251:1967). Running water under pressure shall be easily accessible to all rooms and areas in which food is handled and equipment are washed.

9.2 The equipment shall be so installed and used that back siphonage of liquid into the potable water lines is precluded.

9.3 Hot and cold water in ample supply shall be provided for plant clean-up needs, where necessary.

9.4 The storage tanks for water should, unless completely sealed, be kept covered with tight fitting lids, examined regularly and cleaned out at least once every six month. The date of the last cleaning and next cleaning shall be prominently displayed on the storage tanks.

9.5 The water shall be periodically examined as desired by the Licensing Authority, chemically and bacteriologically. A record of such examination shall be maintained.

10 EMPLOYEE HYGIENE

10.1 Every person employed for food handling of raw materials and end products and in packing section in the factory shall be medically examined by an authorized registered medical practitioner and the examination shall include X-Ray of the chest for tuberculosis. The examination shall also include: examination of stool for protozoal and helminthic infestation for those parasites which are transmitted by ingestion, and for the presence of *Salmonella*, *Shigella* species and *Vibrio cholerae*. Subsequently, the employee shall be medically examined once in a year or more frequently; if necessary, to ensure that he is medically fit and free from communicable diseases. A record of such examination shall be maintained.

10.1.1 It shall be impressed on all employees that they should notify the medical officer or management, cases of fever, vomiting, diarrhoea, typhoid, dysentery, boils, cuts and sores and ulcers (however small), discharging ears and notifiable diseases occurring in their own homes and families.

10.1.2 No worker who is suspected to be suffering from any of the disorders listed in 10.1.1 shall be permitted to work inside the unit. The supervisor shall check the personal hygiene of the workers before the start of work and whenever they enter any processing room after any absence.

10.2 Employees shall keep their finger nails short and clean and wash their hands with soap or detergent and water before commencing work and after each absence, specially after using sanitary conveniences. Towels used for drying hands should be clean. No worker shall allow his hands or any part of his body or clothing to come in contact with the food. He should adopt strict hygienic practices so as to avoid adding any microbial contamination to the material.

10.3 All employees shall be inoculated and vaccinated against the enteric groups of diseases once a year. In case of an epidemic, all workers shall be inoculated. A record shall be maintained.

10.4 No worker shall be allowed to work without proper clothing and foot wear.

10.5 Employees shall be provided with clean uniforms (preferably white) or aprons or both and clean washable caps, where necessary.

10.5.1 Separate room or place for changing the clothes shall be provided. The clothes shall not be hung in any processing room.

10.5.2 The uniforms shall not be worn outside the plant but put on just before starting the work and changed when leaving.

10.6 Eating, spitting, nose cleaning or the use of tobacco in any form or chewing betel leaves shall be prohibited within the manufacturing, packing and storage area of the unit. Notice to this effect shall be

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prominently displayed and enforced.

10.7 Sufficient and suitable sanitary conveniences shall be provided, maintained and kept clean in every factory. The conveniences shall be properly lighted. Separate conveniences shall be provided for each sex. No convenience shall open directly into any work room in the factory. The conveniences shall always be maintained clean and in good repairs.

10.8 Sufficient number of wash basins with adequate provision of nail brushes, soap and towels, latrines and urinals in the prescribed manner should be provided, conveniently situated and accessible to workers at all times while they are at the factory (*see also* Table 3 of IS 1172 : 1983). The wash basins shall be installed in or alongside the sanitary conveniences.